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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,266	02/07/2002	Toshio Morita	Q63212	6691
23373	7590	04/15/2004	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			GRAY, JILL M	
			ART UNIT	PAPER NUMBER
			1774	

DATE MAILED: 04/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/067,266	Applicant(s) MORITA ET AL.	
	Examiner Jill M. Gray	Art Unit 1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The rejection of claims 1, 5-11, 15-16, and 20 under 35 U.S.C. 103(a) as being unpatentable over European Patent Publication 583,062 A1, (Harada) in view of PCT Publication WO 00/58536 (Nishimura et al, English equivalent 6,489,026 B1) is withdrawn in view of applicants amendments.

The rejection of claims 2-4, 12-14, and 17-19 under 35 U.S.C. 103(a) as being unpatentable over European Patent Publication 583,062 A1 (Harada) in view of PCT Publication WO 00/58536 (Nishimura) and Chung 5,643,670 is withdrawn in view of applicants amendments.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-18 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over PCT Publication WO 00/58536 (Nishimura et al, English equivalent 6,489,026 B1) in view of European Patent Publication 583,062 A1, (Harada).

Nishimura teaches vapor grown carbon fibers containing boron crystals. The fibers have a diameter of 1μ or less, a bulk density of 0.05 g/cm^3 , a hollow part in the center and boron concentration, and are formed from a mixture of a boron compound and a vapor grown carbon fiber. The mixture has a boron concentration in amounts of

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10 mass% or less, and is heat-treated at a temperature of 2000° C or higher in the presence of an inert gas, as required by claims 1, 6 and 10, and compressed as required by claim 7. The boron compound can be of the type contemplated by applicants in claim 9, such as elementary boron and boron nitride and can be deposited on the surface of the fibers, per claim 16. In addition, the amount of boron in the carbon fibers is 0.1-3 mass%, which is within applicants' range. See column 8, lines 9-36 and lines 63-65. Nishimura is silent as to the utility of nitrogen as an inert gas. Harada teaches vapor grown carbon fibers and composite articles produced therefrom. The fiber diameter is 5µm or smaller and the fibers can be mixed with plastic material, rubbery material, ceramic material, or metallic material, per claim 11. See page 3, lines 28-29 and lines 54-57. The fibers can be prepared by heat treating the fibers at a temperature of 2000° C or higher in an atmosphere of an inert gas such as nitrogen or argon. See page 4, and lines 10-35.

Regarding claims 6-8, while Nishimura is silent as to the usage of nitrogen as his inert gas, it is the examiner's position that the inert gasses nitrogen and argon are functionally equivalent and the teachings of Harada would have provided direction to the skilled artisan as to what parameters were critical in the production of vapor grown carbon fibers, namely, the heat-treating in the presence of an inert gas, and a suggestion as to those inert gasses that would have been suitable in said vapor grown carbon fiber formation, namely, argon and nitrogen. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made, in view of the teachings of Harada, to modify the process of Nishimura by using nitrogen as the

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inert gas with a reasonable expectation of success of obtaining vapor grown carbon fibers suitable in the formation of composite articles. As to the amount of boron in a depth of 1 nm required by claims 1, 11, 14, 16 and 21, Nishimura is silent as to this property. Nonetheless, the fact that Nishimura teaches a boron content within applicants' range and a process of making that is substantially similar to that set forth by applicants, it is the examiner's position that this property is within applicants' range as well, in the absence of factual evidence to the contrary. Moreover, it is also the examiner's position that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 105 USPQ 233 (CCPA 1955). As to claims 2-3, 12-13, and 17-18, Nishimura teaches that his boron compound can be boron nitride (column 8, line 32) and that the boron compound can be present in an amount of about 2% by mass, essentially as claimed by applicants. As to the specific resistivity and heat conductivity as set forth in claims 5, 15 and 20, since Nishimura teaches vapor grown carbon fibers having a boron concentration within applicants' range and formed in a manner substantially as contemplated by applicants, it is the examiner's position that these properties are the same as well and are inherent in the fibers of Nishimura.

Response to Arguments

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

No claims are allowed.

Conclusion

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill M. Gray whose telephone number is 571-272-1524. The examiner can normally be reached on M-F 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jill M. Gray
Examiner
Art Unit 1774

jmg

CYNTHIA H. KELLY
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